

Abstract of the Disclosure

A method of fabricating a ferroelectric thin film on an iridium-composite electrode in an integrated circuit device includes preparing a substrate; depositing an iridium-composite bottom electrode on the substrate; annealing the bottom electrode in a first annealing step;

5 depositing a buffer layer on the bottom electrode, including depositing a layer of material taken from the group of materials consisting of HfO_2 , ZrO_2 , TiO_2 , LaO_x , La-Al-O , Ti-Al-O , Hf-Al-O , Zr-Al-O , Hf-Zr-O , Zr-Ti-O , Hf-Ti-O , La-Zr-O , La-Hf-O , and La-Ti-O ; annealing the buffer layer in a second annealing step; depositing a layer of $\text{Bi}_4\text{Ti}_3\text{O}_{12}$, to a thickness of between about 20 nm to 500 nm, on the buffer layer; annealing the ferroelectric layer in a third annealing step; and

10 completing the integrated circuit device.